

WHAT IS CLAIMED IS:

1. A train detection system, comprising:
 - a transmitter connectable to a track circuit enabling transmission to the track circuit of a train detecting signal for confirming the existence of a train in the track circuit;
 - a receiver connectable to the track circuit enabling reception of the train detecting signal from the transmitter through the track circuit; and
 - a wayside controller connectable to the transmitter and the receiver enabling transmission of the train detecting signal to the transmitter and reception of the train detecting signal from the receiver;
 - wherein the transmitter adds a first unique code to the train detecting signal received from the wayside controller and transmits the thus processed train detecting signal to the track circuit;
 - wherein the receiver adds a second unique code to the train detecting signal received from the track circuit and transmits the thus processed train detecting signal to the wayside controller; and
 - wherein the wayside controller includes a unique code checker which checks whether or not the first unique code and the second unique code, which are received from the receiver, agree with the contents of a predetermined code.

2. A train detection system, comprising:
 - a transmitter connectable to a track circuit for transmitting a train detecting signal to the track circuit;
 - a receiver connectable to the track circuit for receiving the train detecting signal from the track circuit; and

a wayside controller connectable to the transmitter and the receiver for transmitting the train detecting signal to the transmitter and for receiving the train detecting signal from the receiver;

wherein the transmitter performs operational processing with respect to information including the train detecting signal received from the wayside controller on the basis of a first unique code and transmits the thus processed information to the track circuit;

wherein the receiver performs operational processing with respect to the information received from the track circuit on the basis of a second unique code and transmits the thus processed information to the wayside controller; and

wherein the wayside controller includes a unique code checker for checking whether or not the information received from the receiver agrees with the contents of predetermined information.

3. A train detection system, comprising:

a transmitter connectable to a track circuit for transmitting a train detecting signal to the track circuit;

a receiver connectable to the track circuit for receiving the train detecting signal from the track circuit; and

a wayside controller connectable to the transmitter and the receiver for transmitting the train detecting signal to the transmitter and receiving the train detecting signal from the receiver;

wherein the transmitter adds a unique code to the train detecting signal received from the wayside controller and transmits the train detecting signal to the track circuit;

wherein the receiver transmits the train detecting signal to the wayside controller; and

wherein the wayside controller includes a unique code checker for checking whether or not the unique code received from the receiver agrees with the contents of a predetermined code.